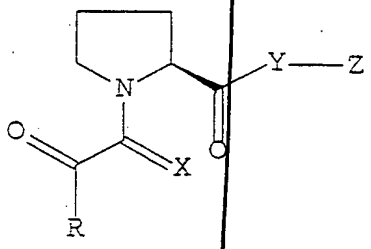
WHAT IS CLAIMED IS:

1. A method of revitalizing hair growth which comprises: administering to an animal an effective amount of a non-immunosuppressive pyrrolidine carboxylate compound.

2. The method of claim 1 wherein the pyrrolidine carboxylate is a compound of the formula:



I

wherein

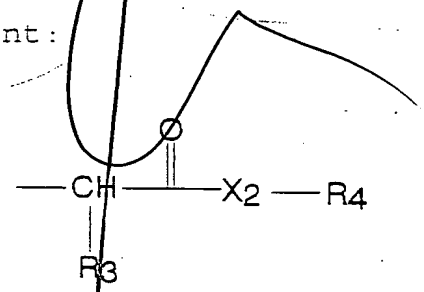
$R_1$ is selected from the group consisting of a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C^1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino:

X is selected from the group consisting of oxygen, sulphur, methylene ($CH_2$), or $H_2$;

Y is selected from the group consisting of oxygen or $NR_2$, where $R_2$ is hydrogen or $C^1$-$C_6$ alkyl; and

Z is selected from the group consisting of $C_2$-$C_6$ straight or branched chain alkyl ~~or alkenyl~~,

wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl ~~or alkenyl~~ chain, and $Ar_2$ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ ~~alkoxy~~ or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; Z may also be the fragment:



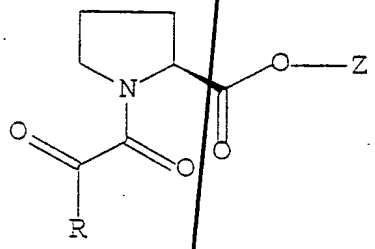

wherein

$R_3$ is a $C_1$-$C_9$ straight or branched alkyl $\#_1$-$C_8$ optionally substituted with $C_3$-$C_8$ cycloalkyl, or $Ar_1$ as defined above, and unsubstituted $Ar_1$;

$X_2$ is O or $NR_5$, where $R_5$ is selected from the group consisting of hydrogen, $C_1$-$C_6$ straight or branched alkyl and alkenyl;

$R_4$ is selected from the group consisting of phenyl, benzyl, $C_1$-$C_5$ straight or branched alkyl or alkenyl, and $C_1$-$C_5$ straight or branched alkyl or alkenyl substituted with phenyl; or pharmaceutically acceptable salts or hydrates thereof.

3. The method of claim 1 wherein the pyrrolidine carboxylate is a compound of the formula:



II

wherein

$R_1$ is a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, or $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, and where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_5$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino;

Z is a $C_2$-$C_5$ straight or branched chain alkyl or alkenyl, wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl or alkenyl chain, or $Ar_2$ where $Ar_2$ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; or pharmaceutically acceptable salts or hydrates thereof.

4. The method of claim 1 wherein the pyrrolidine carboxylate compound is selected from the group consisting of:

3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-prop-2-(E)-enyl (2S)-1-(3,3,-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-propyl(2S)-1-(3,3,dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

(1R)-1,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-furanyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thienyl])entyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thiazolyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2,phenyl)ethyl-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-prop-2-(E)-enyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

2-(3,4,5-trimethoxyphenyl)-1-ethyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-N-([2-thienyl]glyoxyl) pyrrolidinecarboxylate,

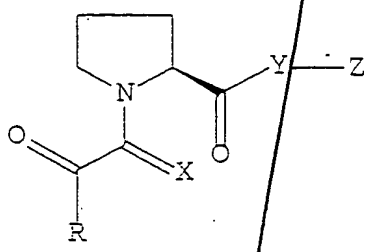
3,3-Diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxobutyl)-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-cyclohexylglyoxyl-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-(2-thienyl)glyoxyl-2-pyrrolidinecarboxylate, and pharmaceutically acceptable salts, hydrates, and mixtures thereof.

5. A method of promoting hair germination which comprises: administering to an animal an effective amount of a non-immunosuppressive pyrrolidine carboxylate compound.

6. The method of claim 5 wherein the pyrrolidine carboxylate is a compound of the formula:



I

wherein

$R_1$ is selected from the group consisting of a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-,3-,4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C^1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino:

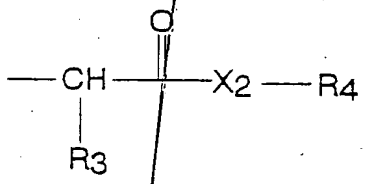
X is selected from the group consisting of oxygen, sulfur, methylene $(CH_2)$, or $H_2$;

Y is selected from the group consisting of oxygen or $NR_2$, where $R_2$ is hydrogen or $C^1$-$C_6$ alkyl; and

Z is selected from the group consisting of $C_2$-$C_6$ straight

or branched chain alkyl or alkenyl,

wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl or alkenyl chain, and $Ar_2$ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; Z may also be the fragment:



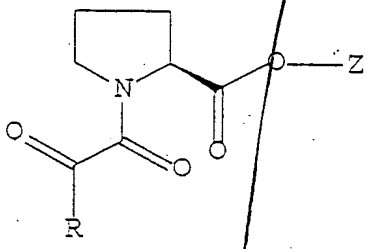
wherein

$R_3$ is a $C_1$-$C_9$ straight or branched alkyl #$_1$-$C_8$ optionally substituted with $C_3$-$C_8$ cycloalkyl, or $Ar_1$ as defined above, and unsubstituted $Ar_1$;

$X_2$ is O or $NR_5$, where $R_5$ is selected from the group consisting of hydrogen, $C_1$-$C_6$ straight or branched alkyl and alkenyl;

$R_4$ is selected from the group consisting of phenyl, benzyl, $C_1$-$C_5$ straight or branched alkyl or alkenyl, and $C_1$-$C_5$ straight or branched alkyl or alkenyl substituted with phenyl; or pharmaceutically acceptable salts or hydrates thereof.

7. The method of claim 5 wherein the pyrrolidine carboxylate is a compound of the formula:



II

wherein

$R_1$ is a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, or $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, and where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino;

Z is a $C_2$-$C_6$ straight or branched chain alkyl or alkenyl, wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl or alkenyl chain, or $Ar_2$ where $Ar_2$ is selected

from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; or pharmaceutically acceptable salts or hydrates thereof.

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8. The method of claim 5 wherein the pyrrolidine carboxylate is selected from the group consisting of:

3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-prop-2-(E)-enyl (2S)-1-(3,3,-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-propyl(2S)-1-(3,3,dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

(1R)-1,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-

dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-furanyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thienyl])entyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thiazolyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2,phenyl)ethyl-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-prop-2-(E)-enyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

2-(3,4,5-trimethoxyphenyl)-1-ethyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dicxopentyl)-2-pyrrolidinecarboxylate,

3-(4-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-tert-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-

dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-tert-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-N-([2-thienyl]glyoxyl) pyrrolidinecarboxylate,

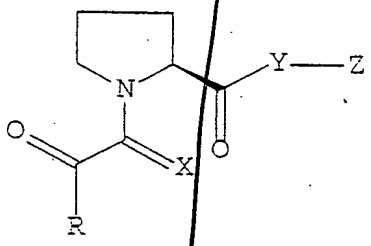
3,3-Diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxobutyl)-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-cyclohexylglyoxyl-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-(2-thienyl)glyoxyl-2-pyrrolidinecarboxylate, and pharmaceutically acceptable salts, hydrates, or mixtures thereof.

9. A method of preventing hair loss which comprises: administering to an animal an effective amount of a non-immunosuppressive pyrrolidine carboxylate compound.

10. The method of claim 9 wherein the pyrrolidine carboxylate is a compound of the formula:



I

wherein

$R_1$ is selected from the group consisting of a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C^1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino:

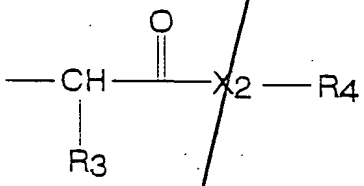
X is selected from the group consisting of oxygen, sulfur, methylene ($CH_2$) or $H_2$;

Y is selected from the group consisting of oxygen or $NR_2$, where $R_2$ is hydrogen or $C^1$-$C_6$ alkyl; and

Z is selected from the group consisting of $C_2$-$C_6$ straight or branched chain alkyl or alkenyl,

wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl or alkenyl chain, and $Ar_2$ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro,

trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; Z may also be the fragment:



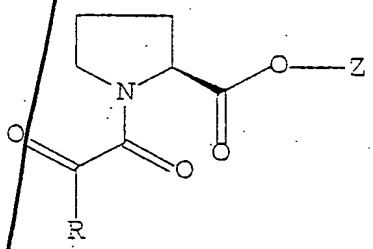
wherein

$R_3$ is a $C_1$-$C_9$ straight or branched alkyl optionally substituted with $C_3$-$C_8$ cycloalkyl, or $Ar_1$ as defined above, and unsubstituted $Ar_1$;

$X_2$ is O or $NR_5$, where $R_5$ is selected from the group consisting of hydrogen, $C_1$-$C_6$ straight or branched alkyl and alkenyl;

$R_4$ is selected from the group consisting of phenyl, benzyl, $C_1$-$C_5$ straight or branched alkyl or alkenyl, and $C_1$-$C_5$ straight or branched alkyl or alkenyl substituted with phenyl; or pharmaceutically acceptable salts or hydrates thereof.

11. The method of claim 9 wherein the pyrrolidine carboxylate is a compound of the formula:



II

wherein

$R_1$ is a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, or $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, and where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino;

Z is a $C_2$-$C_6$ straight or branched chain alkyl or alkenyl, wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl or alkenyl chain, or $Ar_2$ where $Ar_2$ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; or pharmaceutically acceptable salts or hydrates thereof.

12. The method of claim 9 wherein the pyrrolidine carboxylate is selected from the group consisting of:

3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-prop-2-(E)-enyl (2S)-1-(3,3,-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-propyl(2S)-1-(3,3,dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

(1R)-1,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-furanyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thienyl])entyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thiazolyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2,phenyl)ethyl-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-prop-2-(E)-enyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

2-(3,4,5-trimethoxyphenyl)-1-ethyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-N-([2-thienyl]glyoxyl) pyrrolidinecarboxylate,

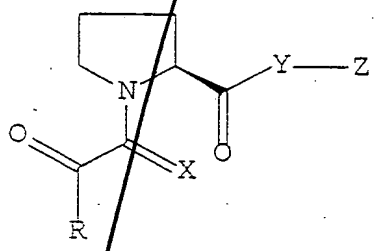
3,3-Diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxobutyl)-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-cyclohexylglyoxyl-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-(2-thienyl)glyoxyl-2-pyrrolidinecarboxylate, or pharmaceutically acceptable salts, hydrates, and mixtures thereof.

13. A method of treating alopecia which comprises: administering to an animal an effective amount of a non-immunosuppressive pyrrolidine carboxylate compound.

14. The method of claim 13 wherein the pyrrolidine carboxylate is a compound of the formula:



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wherein

$R_1$ is selected from the group consisting of a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl,

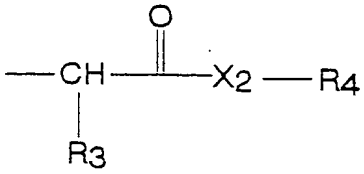
having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C^1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino:

X is selected from the group consisting of oxygen, sulphur, methylene ($CH_2$), or $H_2$;

Y is selected from the group consisting of oxygen or $NR_2$, where $R_2$ is hydrogen or $C^1$-$C_6$ alkyl; and

Z is selected from the group consisting of $C_2$-$C_6$ straight or branched chain alkyl or alkenyl,

wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl or alkenyl chain, and $Ar_2$ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; Z may also be the fragment:



wherein

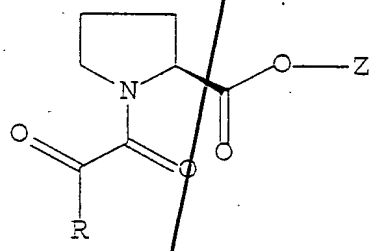
$R_3$ is a $C_1$-$C_9$ straight or branched alkyl #$_1$-$C_8$

optionally substituted with $C_3$-$C_8$ cycloalkyl, or $Ar_1$ as defined above, and unsubstituted $Ar_1$;

$X_2$ is O or $NR_5$, where $R_5$ is selected from the group consisting of hydrogen, $C_1$-$C_6$ straight or branched alkyl and alkenyl;

$R_4$ is selected from the group consisting of phenyl, benzyl, $C_1$-$C_5$ straight or branched alkyl or alkenyl, and $C_1$-$C_5$ straight or branched alkyl or alkenyl substituted with phenyl; or pharmaceutically acceptable salts or hydrates thereof.

15. The method of claim 13 wherein the pyrrolidine carboxylate is a compound of the formula:



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wherein

$R_1$ is a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, or $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, and where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl,

having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino;

Z is a $C_2$-$C_6$ straight or branched chain alkyl or alkenyl, wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl or alkenyl chain, or $Ar_2$ where $Ar_2$ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; or pharmaceutically acceptable salts or hydrates thereof.

16. The method of claim 13 wherein the pyrrolidine carboxylate compound is selected from the group consisting of:

3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-prop-2-(E)-enyl (2S)-1-(3,3,-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-

dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-propyl(2S)-1-(3,3,dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

(1R)-1,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-furanyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thienyl])entyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thiazolyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2,phenyl)ethyl-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-prop-2-(E)-enyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

2-(3,4,5-trimethoxyphenyl)-1-ethyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-

pyrrolidinecarboxylate,

3-(4-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-tert-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

A3 3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-tert-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-N-([2-thienyl]glyoxyl) pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxobutyl)-2-pyrrolidinecarboxylate,

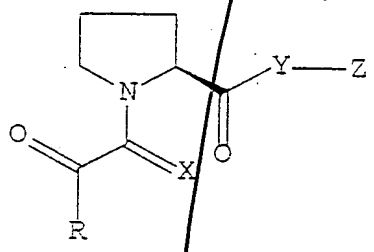
3,3-Diphenyl-1-propyl (2S)-1-cyclohexylglyoxyl-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-(2-thienyl)glyoxyl-2-pyrrolidinecarboxylate, and pharmaceutically acceptable salts, hydrates, and mixtures thereof.

17. A method of treating hair loss which comprises: administering to an animal an effective amount of a non-

immunosuppressive pyrrolidine carboxylate compound.

18. The method of claim 17 wherein the pyrrolidine carboxylate is a compound of the formula:



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wherein

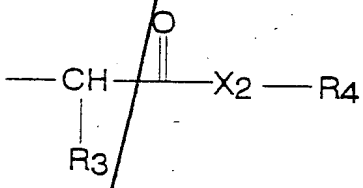
$R_1$ is selected from the group consisting of a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C^1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino:

X is selected from the group consisting of oxygen, sulphur, methylene ($CH_2$), or $H_2$;

Y is selected from the group consisting of oxygen or $NR_2$, where $R_2$ is hydrogen or $C^1$-$C_6$ alkyl; and

Z is selected from the group consisting of $C_2$-$C_6$ straight or branched chain alkyl or alkenyl,

wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl or alkenyl chain, and $Ar_2$ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; Z may also be the fragment:



wherein

$R_3$ is a $C_1$-$C_9$ straight or branched alkyl optionally substituted with $C_3$-$C_8$ cycloalkyl, or $Ar_1$ as defined above, and unsubstituted $Ar_1$;

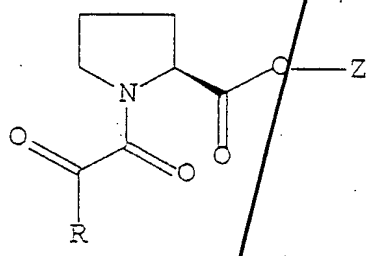
$X_2$ is O or $NR_5$, where $R_5$ is selected from the group consisting of hydrogen, $C_1$-$C_6$ straight or branched alkyl and alkenyl;

$R_4$ is selected from the group consisting of phenyl, benzyl, $C_1$-$C_5$ straight or branched alkyl or alkenyl, and $C_1$-$C_5$ straight or branched alkyl or alkenyl substituted with phenyl; or pharmaceutically

acceptable salts or hydrates thereof.

Claim 14

19. The method of claim 17 wherein the pyrrolidine carboxylate is a compound of the formula:



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wherein

$R_1$ is a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, or $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, and where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino;

Z is a $C_2$-$C_6$ straight or branched chain alkyl or alkenyl, wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched

alkyl or alkenyl chain, or $Ar_2$ where $Ar_2$ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro trifluoromethyl, $C_1$-$C_5$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; or pharmaceutically acceptable salts or hydrates thereof.

20. The method of claim 17 wherein the pyrrolidine carboxylate compound is selected from the group consisting of:

3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-prop-2-(E)-enyl (2S)-1-(3,3,-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-propyl(2S)-1-(3,3,dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

(1R)-1,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-furanyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thienyl])entyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thiazolyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2,phenyl)ethyl-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-prop-2-(E)-enyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

2-(3,4,5-trimethoxyphenyl)-1-ethyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-*tert*-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-N-([2-thienyl]glyoxyl) pyrrolidinecarboxylate,

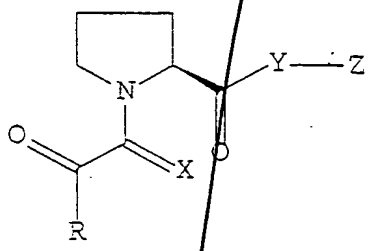
3,3-Diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxobutyl)-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-cyclohexylglyoxyl-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-(2-thienyl)glyoxyl-2-pyrrolidinecarboxylate, and pharmaceutically acceptable salts, hydrates, and mixtures thereof.

21. A method of treating hair loss associated with cancer therapy, wherein the cancer therapy is selected from the group consisting of radiation and chemotherapy, wherein said method comprises: administering to an animal an effective amount of a non-immunosuppressive pyrrolidine carboxylate compound.

22. The method of claim 21 wherein the pyrrolidine carboxylate is a compound of the formula:



I

wherein

$R_1$ is selected from the group consisting of a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C^1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino:

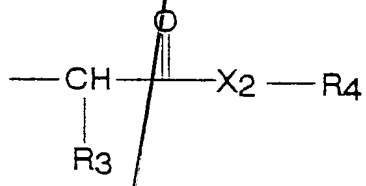
X is selected from the group consisting of oxygen, sulphur, methylene ($CH_2$), or $H_2$;

Y is selected from the group consisting of oxygen or $NR_2$, where $R_2$ is hydrogen or $C^1$-$C_6$ alkyl; and

Z is selected from the group consisting of $C_2$-$C_6$ straight

or branched chain alkyl or alkenyl,

wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl or alkenyl chain, and $Ar_2$ is selected from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, and phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; Z may also be the fragment:



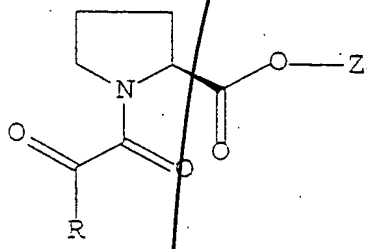

wherein

$R_3$ is a $C_1$-$C_9$ straight or branched alkyl #$_1$-$C_8$ optionally substituted with $C_3$-$C_8$ cycloalkyl, or $Ar_1$ as defined above, and unsubstituted $Ar_1$;

$X_2$ is O or $NR_5$, where $R_5$ is selected from the group consisting of hydrogen, $C_1$-$C_6$ straight or branched alkyl and alkenyl;

$R_4$ is selected from the group consisting of phenyl, benzyl, $C_1$-$C_5$ straight or branched alkyl or alkenyl, and $C_1$-$C_5$ straight or branched alkyl or alkenyl substituted with phenyl; or pharmaceutically acceptable salts or hydrates thereof.

23. The method of claim 21 wherein the pyrrolidine carboxylate is a compound of the formula:



II

wherein

$R_1$ is a $C_1$-$C_9$ straight or branched chain alkyl or alkenyl group optionally substituted with $C_3$-$C_8$ cycloalkyl, $C_3$ or $C_5$ cycloalkyl, $C_5$-$C_7$ cycloalkenyl, or $Ar_1$, where said alkyl, alkenyl, cycloalkyl or cycloalkenyl groups may be optionally substituted with $C_1$-$C_4$ alkyl, $C_1$-$C_4$ alkenyl, or hydroxy, and where $Ar_1$ is selected from the group consisting of 1-naphthyl, 2-naphthyl, 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, $C_1$-$C_6$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino;

Z is a $C_2$-$C_6$ straight or branched chain alkyl or alkenyl, wherein the alkyl chain is substituted in one or more positions with $Ar_1$ as defined above, $C_3$-$C_8$ cycloalkyl, cycloalkyl connected by a $C_1$-$C_6$ straight or unbranched alkyl or alkenyl chain, or $Ar_2$ where $Ar_2$ is selected

from the group consisting of 2-indolyl, 3-indolyl, 2-furyl, 3-furyl, 2-thiazolyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, or phenyl, having one to three substituents which are independently selected from the group consisting of hydrogen, halo, hydroxyl, nitro trifluoromethyl, $C_1$-$C_5$ straight or branched alkyl or alkenyl, $C_1$-$C_4$ alkoxy or $C_1$-$C_4$ alkenyloxy, phenoxy, benzyloxy, and amino; or pharmaceutically acceptable salts or hydrates thereof.

24. The method of claim 21 wherein the pyrrolidine carboxylate compound is selected from the group consisting of:

3-phenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-prop-2-(E)-enyl (2S)-1-(3,3,-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3,4,5-trimethoxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-propyl(2S)-1-(3,3,dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4,5-methylenedioxyphenyl)-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-cyclohexyl-1-prop-2-(E)-enyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

(1R)-1,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-

dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-furanyl])ethyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thienyl])entyl-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2-[2-thiazolyl])ethyl-2-pyrrolidinecarboxylate,

AS 3-phenyl-1-propyl (2S)-1-(1,2-dioxo-2,phenyl)ethyl-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2,5-dimethoxyphenyl)-1-prop-2-(E)-enyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

2-(3,4,5-trimethoxyphenyl)-1-ethyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(2-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(4-Pyridyl)-1-propyl(2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-tert-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-phenyl-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexylethyl-1,2-

dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-tert-butyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3,3-diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxopentyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-1-(2-cyclohexyl-1,2-dioxoethyl)-2-pyrrolidinecarboxylate,

3-(3-Pyridyl)-1-propyl (2S)-N-([2-thienyl]glyoxyl) pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-(3,3-dimethyl-1,2-dioxobutyl)-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-cyclohexylglyoxyl-2-pyrrolidinecarboxylate,

3,3-Diphenyl-1-propyl (2S)-1-(2-thienyl)glyoxyl-2-pyrrolidinecarboxylate, and pharmaceutically acceptable salts, hydrates, and mixtures thereof.